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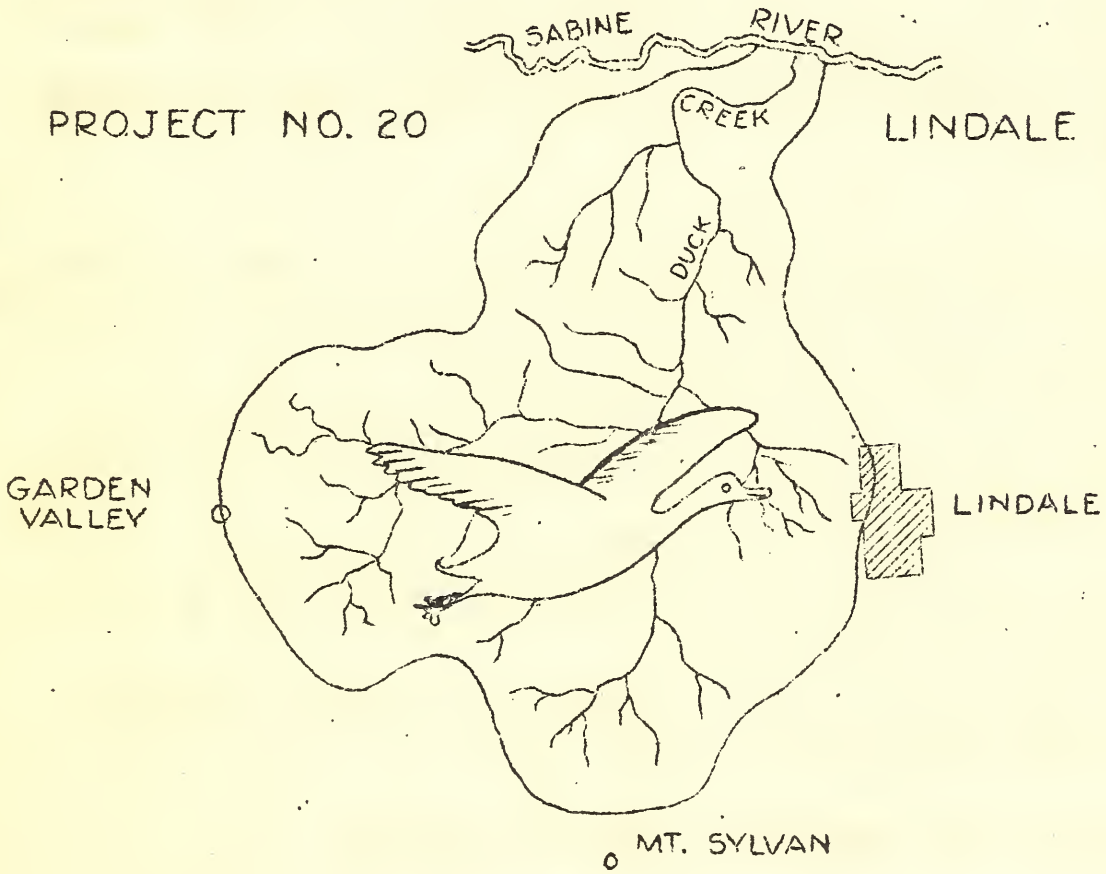
DUCK CREEK NEWS

UNITED STATES
DEPARTMENT OF THE INTERIOR
SOIL EROSION SERVICE

PROJECT NO. 20 LINDALE TEXAS



OCT 20 1934

EROSION MENACE RECOGNIZED

"The seriousness of the problem of soil erosion is not doubted by the public --," says the Dallas Morning News in a recent editorial. There is indeed no doubt that people are paying more and more attention to gullied slopes and clay galled fields and abandoned farms as they pass by them on the highways. There is no doubt that the farmers of the Duck Creek watershed recognize the seriousness of the situation,for they are giving the Soil Erosion Service almost 100% cooperation. Farmers who once would have said, "That farm is worn out," now say, "That farm has washed away," for they know that erosion robs the land of many times as much fertility as the crops draw from it.

Literally thousands of people studied the Soil Erosion Service exhibits at the East Texas Fair and at the State Fair at Dallas. Dozens of them described the erosion situation they had on their own farms, and asked, "What can I do to stop it?" School teachers asked for more information on erosion and how to prevent it, so they could impart the message to the children in the classrooms. Many others stated that erosion control work was the most important work ever undertaken for the good of all the people.

The public is awake to the menace of soil erosion. It can be, - must be, - will be stopped!

E. C. W. CAMP

The first group of young men who will occupy the E. C. W. Camp at Lindale arrived October 11 from the Big Bend area, where they have been at work on a proposed park site. The first group of 118 will be followed by others until the camp has its full strength of approximately 225 men.

The camp, which is listed as S. E. S. T-3, will work under direction of the Soil Erosion Service on the Duck Creek project. The men will be engaged in gully control and terrace outlet control work, which are parts of the complete erosion control program.

Members of the Soil Erosion Service Staff who will have charge of the field work are: J. H. Cheek, Camp Superintendent; R. H. Vahrenkamp, Planning Engineer; W. D. Bentley and M. A. Kelly, Technical Foremen; and W. A. McKinnon, Operation Foreman. These men will plan and supervise construction of the various types of structures installed.

Those in charge of the camp are: Lieutenant G. E. Rodieck, Commanding Officer; Lieutenant John H. Currie, Second in Command; Dr. Petit, Contract Physician, and W. P. Knox, Educational Director.

UNGRAZED-UNBURNED FOREST COVER RETAINS OVER 99% OF RAINFALL

That vegetative cover does have a marked effect on surface run-off of rainfall was conclusively proven by experiments at the Holly Springs, Mississippi, Branch Station of the Southern Forest Experiment Station during the winter of 1931-32. During 70 days of this winter 27 inches of rain fell, of

which 62% ran off the surface of a cultivated corn field and 54% ran off the barren soil of an abandoned field. In contrast to this enormous run-off, less than 1/2 of 1% of the rainfall ran off the surface of a virgin oak forest and off an unburned native grass plot, and only 2% ran off a scrub oak covered plot. The run-off from the corn field carried with it soil at the rate of 34 tons per acre.

In the Duck Creek watershed we have hundreds of acres of cultivated land on the slopes under farm woods that have been seriously damaged by run-off from woodland. Why?

The answer to this question may be given in two words -- overgrazing and fires.

The amount of damage from pasturing woodland depends, of course, on the number of livestock. One characteristic of a heavily pastured woods is the almost complete absence of young growth. Cattle, horses and mules all eat the young seedlings, particularly the hardwoods. They also trample down the young trees or break them off. Hogs eat the seed and thus prevent reproduction, or root the young seedlings out of the ground. Old growth is damaged through trampling and wounding of the roots and compacting the soil to such an extent that it cannot absorb water needed by the trees. Such compacting of soil and wearing of paths and trails down the slopes leads to greater run-off and starting of gullies.

Fire not only destroys the absorbent covering of leaves and decaying matter, but kills young trees, and especially in very dry seasons, seriously damages or kills older trees.

Why not keep fire and stock out of the woods and give nature a chance to give the erosion protection that is so expensive for man to try to duplicate?

STRIP CROPPING

No man-made scheme or plan has yet been worked out which will excel or even closely compete with nature's own method of holding soil in place by use of vegetation. Thick growing plants do the perfect job of controlling soil erosion. The dense network of roots underground binds the soil together, yet increases its ability to take up large quantities of water rapidly. The mass of plant growth above ground checks and spreads out the rapid flow of water, prevents its starting gullies, makes it drop soil that it is carrying, and gives the soil time to absorb it.

We cannot put all our land back into pasture or forest where we would have perfect erosion control, but we must have as perfect protection as we can possibly get. Strip cropping offers us the opportunity of securing as near perfect protection as we can get while the land is still cultivated.

In the Duck Creek area 25 foot strips of cowpeas or sorghum will be broadcast or drilled on the contour between the strips of cultivated crops approximately 75 feet wide on slopes from 0 to 3 percent. The strip crop will make terracing of such slopes unnecessary.

On slopes from 3 to 8 percent, strip crops will be used in connection with contour cultivation and with or without terraces. They will occupy

about one-third of the cultivated area, and will be moved up hill one year and down hill the next to permit rotation. Where terraces are used, the strips will occupy every other terrace ridge and that part of the terrace interval which would be taken up in point or short rows.

Knowing that terracing is ineffective on slopes greater than 8 percent, no terraces will be used on such areas. On the 8 to 10% slopes now in cultivation where not more than 25% of the topsoil has been removed by erosion, strip cropping and contour cultivation will be employed exclusively. In such cases a 50 foot strip will be planted to broadcast cowpeas, and the next 50 feet to cotton. Small grain will be drilled in the cotton rows in the fall to provide protection during winter and spring months. The grain will be permitted to stand until after the heavy spring rains, and until the cotton in the areas above and below has become established and the ground settled. The grain will then be turned under and cowpeas planted.

On 8 to 10 percent slopes now in cultivation where sheet erosion has removed as much as 75% of the topsoil, and there are occasional gullies only those crops such as lespedeza sericea, broadcast cowpeas, sorghum or small grain, which provide continuous cover will be used. Where gullying has reached an advanced stage the areas will be retired from cultivation and returned to pasture or woods.

All land above 10% will be retired from cultivation and rededicated to pasture or forest.

In addition to checking soil losses, the strip cropping has other advantages. The peas and sorghum provide necessary feed. They can be used to assist in rotating crops. They give excellent support to terraces, especially needed when the terraces are new. They check any tendency toward channel scouring, and cover the steep back slope which accelerates washing on half the terraces. When legumes are used, fertility is maintained or added.

Where permanent strips are desired, the perennial lespedeza sericea will be used, and will provide protection, feed and add fertility.

SOIL TYPES OF THE DUCK CREEK AREA

In this issue of the News, we are starting a brief description of the soil types of the Duck Creek area. This is being done in order that those who are not at present acquainted with the names and characteristics of the various soils may get at least a working knowledge of them.

We start with the Kirvin series, because they are the predominant soils of the area, and are also the most erosive.

KIRVIN SOILS

The Kirvin soils are brown or reddish-brown in color, some having light brown or gray shades when dry. These grade below into rather heavy red clay subsoils which in places have slight mottlings or streaks of limonite-yellow color. In the lower or parent material part, at a depth of about 2 to 4 feet beneath the surface, there is found mottled and gray clay much like the subsoil of the Susquehanna soils. In most areas small fragments of ironstone or iron-cemented sandstone occur throughout the layers of topsoil and subsoil. The surface relief ranges from undulating to rolling. The surface drainage is rapid and underdrainage is good. Erosion is severe on unprotected slopes;

erately productive and are utilized to some extent for all of the regional crops. Some areas of the soil are very low in productive capacity because of erosion and exhaustive cropping, but where protected and well managed, they respond well to cultivation. The natural vegetation is chiefly post-oak, red-oak, other hybrid species of oak, and hickory.

FARM REORGANIZATION AND LAND UTILIZATION

The following data assembled from the first twentyfive cooperative agreements signed by the Soil Erosion Service and cooperating farmers on Project No. 20 reveal some interesting changes being made in farm organization. The objectives sought are control of erosion, better land utilization, and to develop economically sound farm enterprises.

Total acreage	2750.9
Acres remaining in cultivation	1431.3
Acres retired from cultivation	188.0
Acres rededicated to pasture	167.3
Acres rededicated to forest	20.7
Total acres in pasture	697.2
Total acres contour furrowed	696.6
Total acres to be seeded	630.8
Number fields under old farm plan	516.0
Number fields under new farm plan	261.0
Acres to be contoured, stripped, and terraced	1101.8
Acres to be contoured and terraced	5.3
Acres to be contoured and stripped	260.7
Acres in crop rotation	1368.3
Acres in woods	499.9
Acres planted to timber	40.8
Acres to receive gully control	1267.4

A. A. A.

At the State Fair of Texas a negro agricultural exhibit had for its background display a new idea concerning the meaning of A. A. A., which is herewith quoted:

A smokehouse
A corncrib
A potato house
A garden
An orchard
A pantry
A brood sow
A milk cow
A flock of hens

That's a good "Live at Home" program, but we think it would be even better if

Adequate Erosion Protection

was added

to the list. Don't you?

VISITORS:

Among those who visited the Duck Creek Project during the past month were: P. H. Haines, State Director of Vocational Education; J. E. Dykes and E. R. Alexander, Department of Vocational Education, A. and M. College; A. S. Imirie, Administrative Assistant to Supervising Engineer, E. C. W.; Chester Cohen, Assistant State Sanitary Engineer; E. D. Hopkins, Assistant State Director in Charge of Malaria Control Work; H. E. Brevard, District Engineer in Charge of Malaria Control in N. E. Texas; L. B. Scott, in Charge of Southern Erosion Plant Studies; L. J. Pelham in Charge Erosion Control Nursery at Pelham, Louisiana; H. G. Lewis, Federal Erosion Experiment Station, Guthrie, Oklahoma.

APPROVAL:

Following is a copy of a resolution passed at a recent meeting of the Board of Directors of the Federal Land Bank of Houston. The Federal Land Bank has always emphasized the necessity of soil conservation, and has given its strongest support to agencies engaged in that work.

R E S O L U T I O N

WHEREAS, The Federal Land Bank of Houston has, for years, recognized the importance and urgent need of soil and water conservation, and the benefits of terracing the drainage structures on farms securing Federal Land Bank loans, realizing that such conservation work promotes the welfare of its borrowers and farm communities, maintains the security of Federal Land Bank loans and adds greatly to the stability and permanency of agriculture in Texas: and,

WHEREAS, The Federal Land Bank has cooperated in every movement looking to the success and extension of this important work, and has followed the work of each Federal and State conservation project with intense interest, anticipating an ultimate program of widely extended permanent conservation work: and,

WHEREAS, the United States Department of Interior, Soil Erosion Service has established erosion demonstration areas in Texas, on the watersheds of Elm Creek, in Bell and Milam Counties, and Duck Creek, in Smith County; has worked out a complete plan of demonstration, and has promoted a cooperative arrangement with land owners under which terracing and water control structures have been built: and the farm owners have agreed to, and have conformed their farming operations to suitable uses, according to the topography of the land,- the effect of which has already shown the value and benefits of conservation work and adaptability of land to uses suitable to its topography: and such experiments have occasioned widespread educational interest, and demonstrated the benefits of conservation and the value of proper soil uses: and,

WHEREAS, there is now being established a wind erosion demonstration project for the North Plains area of Texas, to devise practical means of protecting the soil, which have been badly affected during the past two years:

NOW, THEREFORE, BE IT RESOLVED: That the Board of Directors of the Federal Land Bank of Houston, in meeting assembled, hereby commend as highly constructive, and destined to be of great permanent value to our agricultural welfare, the work of the Soil Erosion Service of the United States Department of Interior, in connection with the Elm Creek, Duck Creek and North Plains Soil erosion areas. And we further commend the use of CCC, PWA, CWA, and FERA workers in the employment of projects so highly beneficial and essential to the public good.

(SIGNED)

John V. Van DoMark
Secretary.

The soil! Use it! Preserve it!
Hand it down to your posterity
As the source of life in this world
And the symbol of life
In the world to come.

J. G. Hutton.